The RARS EXCITER

Issue 243 - June, 1990 - Club Repeaters: 146.04/64 , 223.04/224.64 , & 444.5/449.5

Field Day: June 23 & 24

RARS to Use Camp Butner, 25mi N of Raleigh

What's It all About?

To quote QST: "The objective of Field day are to work as many stations as possible and in so doing, to learn to operate in abnormal situations under less-than-optimum conditions. A premium is placed on skills and equipment developed to meet the challenge of emergency preparedness and to acquaint the public with the capabilities of Amateur Radio." When the contest starts (1:00 PM Saturday 23 JUN), the airwaves will "become alive with signals," all competing against each other to rack up the most contacts.

As with any major effort, there has been quite a lot of activity and pre-planning for this annual event -- both in RARS, as well as within other clubs and individuals all across the nation. Within RARS, Bob (NA4G), and Tim (N4IQA), our Field Day Co-Chairmen, have been working all year -- preparing for this one event.

"Band-Captains" have been appointed, their responsibility is to arrange for rigs & antennas & power, and to coordinate things such that one transmitter does not interfere with another. RARS will have several (10+??) HF stations on the air, both SSB and CW on several bands simultaneously, as well as a Novice/Tech station, operating (probably 10m SSB). Knowing that all this operating is bound to create HUNGER, Anita (KC4AQB) is planning a picnic like atmosphere ... with RARS supplying hotdogs & hamburgers & drinks & ice for Saturday evening.

So -- with all that explanation behind us, what is THE MOST IMPORTANT aspect of RARS' FD operation?? **YOU!!** With out people to operate these stations and make the contacts, all is for naught!! Come and operate -- or come and help -- or come and socialize. **JUST BE SURE TO COME!!** Remember this is a 24 hour event -- bring your camping gear and stay all night if you can -- or just stay as long as you can.

The site is Camp Butner -- a short 25 miles North of Crabtree mall. It is a military facility, with buildings (we'll be using one to cook in, one for the Novice/Tech, and one to sleep in [bring a cot and/or sleeping bag]), and honest-to-goodness toilets!!

Okay -- now that you're coming, what can you expect?? Well, you'll settle yourself down to a finely tuned transmitter and start calling: "This is W4DW, calling CQ Field Day". "W4DW, this is W7XYZ, 6 Alpha, Idaho. Over." (We were called by W7XYZ, another club, operating six transmitters, located in Idaho.) "W7XYZ this is Whiskey Four Delta Whiskey -- Ten Alpha -- North Carolina -- Good luck!" (Our reply to him was that we are also a club, running 10 transmitters.) That's the contact.

Now while all that was going on, your "logger" was checking the "dupe sheet," to make sure you haven't already worked W7XYZ (a "duplicate contact" does not count for additional points). If you haven't, he logs it down and up-dates the "dupe"

Field Day -- continued on Page 13

The Raleigh Amateur Radio Society, Inc. (RARS), founded in 1969, has grown to be one of the premier radio clubs in North Carolina. Current membership exceeds 355.

The objectives of the club are to promote world wide friendship through Amateur Radio; to be of public service by providing radio communication in times of disaster, emergency, or civic need; to educate members in radio technique, and to assist in obtaining Amateur Radio licenses.

All persons interested in Amateur Radio, currently licensed or not, are eligible to apply for membership to the club.

Dues to the club are $10.00 per year (which runs from July 1 to June 30). Applications for membership may be obtained from any of the officers named below; from the newsletter editor, named on the facing column; or at any RARS Meeting.

Club meetings are held the first Wednesday of every month, 7:30 PM, at the Raleigh YMCA, 1601 Hillsborough St.

In addition to the many social and special events, the club sponsors a 2 m repeater, W4DW, on 146.04/64 MHz, and WA4PEN on 223.04 / 224.64 MHz, & 444.5 / 449.5. All repeaters cover Raleigh, and most of the surrounding Wake County area. Auto-patch privileges are available on W4DW to duly licensed RARS members. Future plans call for additional repeaters on the 50 MHz amateur bands

1990 Officers:

President:	Jim DuBreck, N4BYO 1209 Shelly Road Raleigh, NC 27609 781-9437
Vice President:	Anita Kellum, KC4AQB 208 Chatterson Drive Raleigh, NC 17615 846-7455
Secretary:	Ronny Reams, WA4MJF 3509 Rolesville Road Wendell, NC 27591 266-4434
Treasurer:	Tim Buehlmann, N4IQA 1314 Chaney Rd. Raleigh, NC 27606 851-7738

The EXCITER is published monthly by the Raleigh Amateur Radio Society, and is mailed at no cost to its members.

Letters to the Editor, technical articles, items of interest to the ham community and guest editorials are actively solicited.

Any article published in the EXCITER does not necessarily represent the views of, the Officers, Board of Directors, Editor, or Society Membership, nor does publication thereof represent concurrence by the Officers, Board of Directors, Editor, or Society membership with the contents of the article.

Articles will be printed at the discretion of the Editor, and no article will be published unless it is accompanied by the name(s) of the person(s) submitting the article.

All copy must be in the hands of the editor by the end of the Board of Director's meeting on the third Wednesday of each month. Articles submitted for publication may be hand or type written, an ASCII file on disk (IBM or APPLE format), transmitted electronically via telephone modem, or on the ham bands using RTTY or PACKET.

Ham related items for sale by the members will be advertised without charge for one issue, but may be re-submitted as often as desired. These ads must be non-commercial in nature.

Commercial ads will be run in return for the following donations to the club:

	Single Issue	Full Year
Business Card	$5.00	$25.00
Quarter Page	$10.00	$50.00
Half Page	$20.00	$100.00
Full Page	$30.00	$150.00

(Commercial ads must be of "camera-ready quality," and obviously can not be sent via ham bands.) Due to the reprographic process used, no color copy can be accepted.

Advertisers are guaranteed a minimum monthly mailing of 375 copies.

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SPECIAL SERVICE CLUB

ARNS Amateur Radio News Service

AMSAT

SOUTHEASTERN REPEATER ASSOCIATION SOARA MEMBER

Minutes of the Meeting

The regular monthly meeting of the Raleigh Amateur Radio Society was held 02 MAY 90 at the YMCA on Hillsborough Street. President Jim DuBreck called the meeting to order and welcomed the 92 members and 7 guests.

The first order of business was the election and installation of Anita Kellum, KC4AQB, as the Vice-President of the Society.

Jim Babcock, K4ABJ, Manager of the two meter net, made a presentation requesting help with net control stations, and also pitching the "64 on 64 award."

N4BYO announced that there would be a year round RARSfest committee so that so much would not have to be done in so little time. Also, election of the hamfest chairman for next year will be held at the JUNE general meeting. AB4LR has announced that he will not accept the position for 1991.

N4SSU, AB4DQ, AND NA4G reported on the activities of their respective SIGS during the preceding month. N4SSU thanked all for their help with the WALK-A-THON. AB4DQ said that the special event operation on the Outer Banks went well. NA4G requested a meeting of those interested in Field Day after the general meeting.

It was announced that RARS had again received the ARRL Special Service Club Award.

A new RARS net meets Thursdays at 2130 local time on 144.225 Mhz SSB.

WA1WXL had a dual-band Kenwood TM-721a stolen. The serial number is 9053266. It was emphasized that hams should have the ARRL rig insurance in the event of such loss.

K4IWW, Will Harper, presented an interesting program on the National Traffic System.

THE door prizes were a 1990 domestic CALL-BOOK given to WA4JWE and the "Complete Dx-er" book given to AB4SL.

The meeting adjourned.

Ronald G. Reams, WA4MJF
RARS Secretary

Welcome New Members!!

RARS wishes to extend a hearty "Welcome" to 4 new members this month:

William G. Moore, Raleigh
George Rancourt, K1ANX, Southhampton MA
Alice Rozenbroek, (tech call coming!), Chapel Hill,
Wayne Shevin, WA4SNC, Raleigh

As ever, we wish you welcome, and hope that you will all choose to become active within our fair organization. Certainly one of the best is to check into the nightly RARS net. With the addition of these fine folks, our roster now stands at 370 members! The largest ever in the history of RARS. We look forward to talking with you over the air, or at a RARS function! **Again, WELCOME!**

June Meeting

Vice President Anita, KC4AQB, reports that the guest speaker at the June 6 metting will be Tim Drum, a Meteorologist / Senior Scientist with Carolina Power & Light.

Mr. Drum's responsibilities are to serve as corporate advisor in the area of severe weather preparedness / protection. He has quite an extensive background, and his presentation should certainly be an interesting one. We look forward to hearing him, and SEEING YOU there!

Also -- the RARS VE's will be administering FCC licensing exams (Novice thru Extra) in the Annex room, adjacent to the meeting room. Walk-ins will be cheerfully accepted! Exams start 7:30 PM!!

VHF/UHF SIG Report

The regular monthly meeting of RARS VHF-UHF SIG was held on Thursday the 10th of May 1990. Present were: KB4OKB, KM4BU, AB4FY, N4PNO, KN4AK, KC4GFR, KC4JJZ, WA4PEN, KB4EXL, WA4MJF, WA1WXL, KC4NJB, AB4OZ, WA4LHE, KM4UT, KB4VYP, KC4AQB, WA4JWE, KC4OCB, and WD4MYM.

The meeting opened with a discussion on the summer cookout. The SIG decided to participate in the ARRL VHF QSO Party on 09 and 10 JUN 90. We will be using the Camp Butner Field Day Site. K4SAN and WA4MJF are the coordinators for the affair. The contest runs from 1800Z on 09 JUN thru 0300Z 10 JUN.

AB4OZ reported on a visit to the state surplus sales location on the Hwy 54 going to Chapel Hill. There are some radios that we might be interested in on the 23 MAY bid sheet. Also, all were happy to hear that the new (to us anyway) antenna for the 70 cm repeater is ready to be put up. The 19th of May was picked for this activity.

Other happenings: WA4MJF gave a report on the April board meeting to the SIG. KC4AQB was welcomed to her first meeting as the society Vice-President. WA1WXL reported that the two meter SIG would meet next Tuesday. He further reported that the controller was on order and should be here soon. The 1990 RARS Field Day was discussed and participation was encouraged. The theme this year is "do your own thing." The field day site is at Camp Butner and the facilities are good. WA4PEN reported that the 1 1/4 meter GE Exec receiver is still being worked on, but hope to soon have it on line.

WA1WXL presented a class on the uses of a service monitor. He checked several members radios for them. Always is nice to have $20k piece of equipment to check your ham rig with. K4SAN will resume his repeater classes at the June meeting.

The door prizes were won by KC4JJZ and KC4NJB. Our social was held and we had orange pound cake and pineapple upside down cake . The next meeting will be 14 JUN and hope to C U at the June ARRL VHF QSO Party.

Sherry, KB4EXL, SIG Secretary

ROANOKE ISLAND Special Event Report

Walter Van Gieson, AB4DQ

Members of the Outer Banks Repeater Association along with members of the Raleigh Amateur Radio Society joined forces to celebrate the two hundredth anniversary of the founding of the United States Coast Guard. On Friday, April 27th, our group headed eastward to set up our stations on Ice Plant Island, just off Roanoke Island, near the town of Manteo, N.C. We operated from the park area associated with our old friend, The Elizabeth II.

We were welcomed by the W4ACY repeater with "Welcome R A R S" Our main contacts there were Harry Bridges (K4UOR) and Al Schriver (KA5VZG). Most of their club members worked along with us taking turns operating the six HF stations as well as the two meter station they installed.

RARS was represented by Chris (N4PNO) his new dog Kate (K9EYL), Tim (N4IQA), Bob (KC4CPD), Bob (NA4G), John (KK4JB), Paul (K9PM) and Walter (AB4DQ).

Two meters was wide open and Harry and his friends made over 50 contacts from as far away as Harrisburg, PA. All others bands were good and a grand total of 450 contacts were made in the US, Canada, South America and Europe. We operated from portable power, gel cell batteries. K9PM, also known as "Mr. Sunshine", operated from batteries being charged by solar cells. The charging rate was measured at about 6 Amps! Paul had a portable computer and operated a packet station as well as his 40 meter HF rig on that power system.

Sunday morning dawned with storms in the forecast. (Paul had soaked up all the sunshine the day before.) Since we could see lightning in a distance, we quickly struck the stations and made preparations to leave.

We have made some good friends on the Outer Banks of our fair state and we have every intention of celebrating some other event in that very historic area in the future.

Members Speak Out

After the Classes ...
Now What??

The RARS Novice/Tech Training Class is a proven success judging by the number of licensed graduates, the number of upgrades, and the swelling of RARS membership rolls with a reasonable percentage of those graduates. But what about that all important first step: getting on the air?

I recently posted an item on the RARS Computer Bulletin Board raising the question of what the club should be doing -- if anything -- to help recent licensees get on the air. The responses from my question point out the following perceived obstacles / difficulties facing new licensees:

1. Acquiring that first radio (HF or VHF, new or used, SSB or packet, etc.).
2. Adequate and acceptable antenna(s).
3. Dealing with RFI problems and neighbor complaints and maybe the FCC.
4. Not looking too dumb in front of everybody else (i.e. ''real'' hams who know what is really happening...).

I don't think the class setting was (is) designed to address the matter I am raising.

The ''traditional'' solution of this problem, ''Elmers'', doesn't appear to be working with the quantity of newcomers we ''create''. Is it that there simply aren't enough volunteer ''Elmers'' to go around? Or is it perhaps the newcomers are afraid to ask ''just anybody'' for help, for fear of what ever.

I'll pose the following question to the club as a whole, and our Board of Directors in particular: **''Is there a legitimate and recognizable need for a licensing ''follow up'' activity under the sponsorship of RARS?''** I am posing this matter as a question of policy and leadership, rather than a question of specifics such as who, when and how.

73, Steve Modena, AB4EL

[Ed. Note: Steve raises a very interesting question. What does RARS do ***after*** the license comes? Not much. Someone new to RARS, newly licensed, would probably feel quite out of place walking up to a ''stranger'' at a meeting and asking ''Would you help me get on the air?''

Several possible solutions come to mind: perhaps a ''Membership SIG'', with round-table meetings of newcomers & willing (and able) ''Elmers.'' Perhaps a ''sign-up list'' matching newcomers and Elmers, one on one. Perhaps a club sponsored ''rig bank'', offering loaners to let the newcomers gain first hand experience.

As Steve points out, before we jump in with the solution, we need to know, ''is the problem real?'' Is there a need for a club sponsored activity for newly licensed members? Think about it. Talk it up. Let your club officers know YOUR feelings.]

Homebrew SIG Report

The May 9th meeting of the Homebrew SIG was held at the home of Tom McKee, K4ZAD. Matt Reynolds, KB2ACE gave a nice presentation covering QRP solid-state transmitter circuit basics, and examples of circuits he has built including complete transmitters for 80 meter CW and 2 meter FM. Matt demonstrated the units and answered questions. Thanks Matt -- nice pitch.

The June meeting of the Homebrew SIG will be on Wednesday, June 13th, @ 7:30 PM at the home of Al Johnson, N4UOF. Al will fill us in on the construction details of his 4 element 2 meter quad antenna. Al lives at 1247 Kimbolton Dr. in Cary. Take Walnut street off US-1. Go about 3 blocks past Buck Jones Road and turn right on Nottingham. Go one block and turn left on Kimbolton. Al's driveway is the first one on the right. His phone number is 469-1758 and there will be talk-in on 146.04/64

Tom McKee, K4ZAD

49,992 610 Forms!

The FCC advises that in calander '89, they processed 20,047 Novice applications, and 29,817 "other" applications. The VE's reported 51,992 applicants were tested. Only 57% of those tested upgraded.

BUILDING THE "PORTA-J"

(patent being pursued)

Rick Yost, N4VQT

Looking for a neat portable 2 meter antenna to take on trips? This collapsible J-Pole fits inside your brief case with room to spare, and works great from hotel-rooms, on the beach, or anywhere you need an "instant" base station antenna.

The following materials and tools are necessary for building the "PORTA-J" the way I did. If you feel you can cut corners, or if you already have some of the materials, you should save some money.

1) 1 telescopic antenna 72" total extended length (available from Radio Shack)
2) 1 telescopic antenna 30 1/2" total extended length (available from Radio Shack)
3) Antenna Bracket - a piece of 1 1/4" X 1/8" X 1/2" steel stock. Any suitable steel metal with these dimensions will do.
4) RG 58/U Coax cable (length to suit)
5) BNC Connector for HT connection, or PL-259 for SO-239 Connections.
6) Round head machine screws #4-40 X 1/2" (4 rqd)
7) Steel Machine Hex Nuts # 4-40 (4 required)
8) "Super Glue"
9) Quick dry 5 minute Epoxy
10 1 Can of PLASTI-COAT.
11) Solder
12) 1/2" plywood which will be cut to 4" x 4". Plywood must be smoothed on one side for finishing.
13) THUMB SCREW 1/4-20 x 1/2" Hillman Part # J587 available from Ace hardware.
14) TEE NUT FASTENER 1/4-20 5/16" x 3/4" Hillman Part # E2505 available from Ace hardware.
15) Small quantity of Minwax wood stain.
16) Spray can of high gloss Polyurthane.
17) 5" x 5" piece of felt.
18) Elmer's Glue
19) lacquer thinner for clean-up.
20) paint thinner for clean-up.
21) Masking or Scotch tape.

Tools Required.

1). Bench grinder. (If you don't have one, a good steel file will do.)
2) Electric drill.
3) 1 - 7/64" Drill bit.
4) 1 - 3/8" Drill bit.
5) 1- 7/8" wood bit.
6) Single sided razor blade.
7) Large empty band aid can.
8) Pliers.
9) Screw driver.
10) Bench vise.
11) Soldering Iron - 100 watt.
12) Measuring tape.
13) Steel file.
14) 2" paint brush.
15) Saber saw.
16) Hack saw.
17) Medium grade sandpaper.
18) Narrow tip hole punch.
19) 146 Mhz SWR Meter.
20) Scissors.
21) Tin snips.

ASSEMBLY INSTRUCTIONS

1) Prepare antennas for soldering of coax leads. (Figure # 1) Measuring from the bottom of each antenna make a mark exactly 2 1/2 inches up for a filing reference point. Using the side of the file, scuff off about 1/4" of the chrome plating to expose the brass antenna material beneath. Make sure you file completely around the antennas. Be careful not to file too deeply as you may weaken the antenna's strength. When completed, BOTH antennas should have a 1/4" band of brass exposed and located 2 1/2 inches up from the bottom. Using the 7/64" drill bit, re-drill the bottom holes in both antennas. This is to allow the antennas to accept the machine screws.

2) Prepare Antenna Bracket. (Figure # 2) Measure part # 3 for correct size. You may have to fabricate this piece out of scrap metal. Keep in mind that whatever you decide to use, MUST be strong enough to support both antennas as well as securing the antenna (once completed) to the mount. Place both antennas on the outer side of the of the antenna bracket

and using a punch with a narrow tip, punch a whole for each antenna in the bracket. Drill out the holes with the 7/64" drill bit. Next, the thumb screw (part #13) must be smoothed on one side so it will fit perfectly flat on the bracket (you can use a bench grinder to do this or a file and elbow grease). Punch two holes in the wing portion of the thumb screw and drill them out with the 7/64 drill bit. Place the thumb screw in the center on the bottom of the bracket so it is opposite the antennas (facing down). Punch out two more wholes in the bracket using the drilled holes in the thumb screw as a guide.

3) Assemble the antennas and thumb screw to the antenna bracket. (Figure # 2) Assemble the antennas and thumb screw to the antenna bracket with the machine screws and nuts (part #'s 13 & 14). Be certain that these nuts and bolts are as tight as you can get them! Take care NOT to strip them. After tightening the nuts, grind down the portions of the machine screws that extend beyond the nuts.

4) Attach coax to antenna. (Figure # 3) Strip one end of the RG/58U coax about 2 inches. Peel back the shielding all the way to the black outer insulator of the coax to expose the center conductor and insulator. Twist the shielding into a solid stranded wire. Strip the center conductor about 3/4". Using masking tape, tape the coax to the LONG antenna on the inner side. Make sure you tape the coax so that the shield can be wrapped around the LONG antenna at the point where you filed it in step #1. Wrap the shield of the coax completely around the antenna (you should have plenty of excess shielding but don't cut it off until you've finished the soldering connections. BEFORE YOU SOLDER, MAKE SURE YOU EXTEND THE ANTENNAS SO YOUR NOT HEATING MORE METAL THAN YOU HAVE TO! Solder the shield to the LONG antenna and the center conductor to the SHORT antenna. The center conductor (like the shield) must be soldered on the brass filed portion on the SHORT antenna and must be perfectly horizontal to the shield connection. This solder connection will not only provide for the proper match but will also govern the distance between the two antennas. Therefore, it is IMPORTANT to measure the distance between both antennas to ensure the exact distance is maintained for the entire length of the antennas. After letting the solder connections cool, cut off any excess shield or center conductor wire and file down any high solder spots for a smooth finish. Now you can remove the masking tape which held the coax to the LONG antenna. Bend the coax around the bottom of the LONG antenna so that it is perfectly perpendicular the antenna. Run a bead of super glue between the coax and the long antenna and the antenna bracket to ensure a tight fit of the coax to the antenna and the antenna bracket. Hold in place about 1 minute to allow super glue to dry.

5) Antenna re-enforcement. Now that the basic antenna is functionally complete, mix up a small batch of quick drying (5 minute) epoxy cement. Place the epoxy cement on ALL screw and nut connections, and the coax to the antenna. Give everything at least one good coat and allow it to dry. The center conductor will need to be coated about 3 times to give the antenna the support it needs to maintain the correct parallel distance between the two antennas. The 5-minute epoxy will cure relatively fast so you can apply the second and third coats within 5 minute intervals. Set the antenna aside and allow it to cure for another 30 minutes.

6) Base mount assembly. (Figure # 4) Locate the 4" x 4" x 1/2" piece of plywood and mark a hole exactly in the center on the BOTTOM side of the wood. Using a 7/8" wood bit, drill a hole about 1/16" into the plywood. This will act as a recess lip so the nut fastener does not protrude passed the surface once it's installed. Complete the rest of the drilling with a 3/8" drill bit for the nut fastener. Using a hammer tap the nut fastener into the base mount from the BOTTOM. Mix up another small batch of epoxy and secure the nut fastener with the glue. Do not allow the glue to extend past the bottom surface of the mount. If it does, you can sand it after it dries. Completely sand the top and side surfaces of the base mount and apply stain and Polyurthane as per instructions on can - allowing sufficient drying time between applications. Once dry, coat the BOTTOM of the base with a fine coat of Elmer's glue and lay a piece of felt approximately 5" x 5" on the glued side of the base mount. After sufficient drying time, you can cut the excess felt off with a pair of scissors.

7) Plastic coat laminate. Open the can of plastic-coat and pour it into the large band-aid tin box. Grasp the antenna and dip it into the plastic dip and com-

pletely submerge the antenna about 1 inch above the center conductor. Remove the antenna SLOWLY from the dip to avoid runs. As soon as the antenna coax clears the top of the can, immediately pull the coax perpendicular to the antenna so that the plastic coating dries with the coax in a perpendicular position. You will have to dip the antenna three time for best results. Allow 20 to 25 minutes between coats. The plastic coat will start to skin immediately and you don't have much time to play. For complete curing, allow 4 hours per coat to dry. After the antenna has dried completely, you can trim the excess plastic coating from the top portion of the antennas with a razor blade. You will also need to trim off ALL plastic coating from the mounting screw (thumb screw).

8) Standing Wave Ratio and Antenna tuning. Using a suitable washer, attach the antenna to the mount and stand upright on a desk or table in the room. Install the BNC connector to the end of the coax and attach the BNC connector to a good SWR meter. Connect your 2-Meter rig to the transmitter side of the SWR meter. Extend both antennas to their fullest and using the top portions of the whip's, adjust the LONG antenna to 58 inches from the top of the BASE and the SHORT antenna 22 inches form the top of the BASE. Power up the 2-meter rig and check SWR on 144 Mhz and 148 Mhz. Note the readings. If the SWR is higher on 148 MHz than it is on 144 Mhz, SHORTEN the SHORT antenna about 1/8" and re- check SWR. If the SWR is lower on 148 MHz than it is on 144 Mhz, LENGTHEN the SHORT antenna about 1/8" and re-check SWR. Continue until you find a happy medium. I was able to attain a 1:1 SWR on 146 MHz and a 1.3:1 on 144 Mhz and 148 MHz with 45 Watts into the antenna. Be sure to check the SWR in different locations in the room as it may change nominally and you can make it as perfect as you wish. It is better to have a higher SWR on 148 MHz than on 144 Mhz since you can always shorten the antenna (if you have to) but if you cut too short you will not be able to lengthen the antenna. A good rule of thumb, would be to achieve a 1.2:1 SWR on 144 Mhz and a 1.4:1 on 148 MHz. Once you've found the correct length of the antennas, measure them from the top of the base and WRITE DOWN these measurements. Next, extend both antennas to their fullest and mark them as per the measurements you've just written down. Using a pair of tin snips, cut both antennas to their proper length. Next, put the two end pieces you just cut off the antenna in a vise and heat the end as close to the plastic tip with the soldering iron. While applying the heat, use a pair of pliers and pull the plastic end caps off the excess pieces of antennas. Round off the antennas where you cut them so that the end caps can slide easily onto the antennas. Mix up a small batch of epoxy and glue the end caps to the tops of the antennas. After sufficient drying time, dip the two end cap's in the plastic dip. Again, three coats are required. The plastic dip provides a certain amount of shock protection as well as adds to the overall appearance of the antenna.

Well, there you have it! I'm sure this great little 2-Meter ''PORTA-J'' antenna will provide you with years of happy Hamming!

PS. If through your effort's you find a better way to build the ''PORTA-J'', or you find a way of increasing it's gain, please let me know by leaving me an E-mail message on the USPS Network Bulletin Board at (919) 878-5116 or 5114. Thanks!

New Calls Heard:

We missed a couple of new calls for RARS members last month:

N3HXG, JoAnn Cirra,
N4YRF, Robert Mays

Both were recent graduates of the Spring '90 RARS Training class. Sorry for missing it last month!

Also congratulations to RARS members:

Joseph Watkins, now KC4QNQ
Rick Sumrall, (ex N4XPA), **now KN4HF**

.Congrats are in order for Carla & Chuk Gleason (KB4MDY and KB4MDZ, respecively). We understand the stork will be visiting soon (again??). Will it be a "Roger", or will it be a "Crystal?" Maybe both??

Best of Luck Carla & Chuk!

Figure # 1 Antenna Preparation

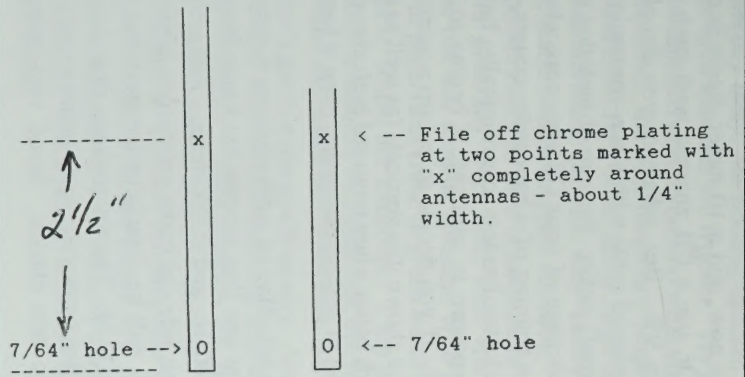


Figure # 2 ANTENNA BRACKET

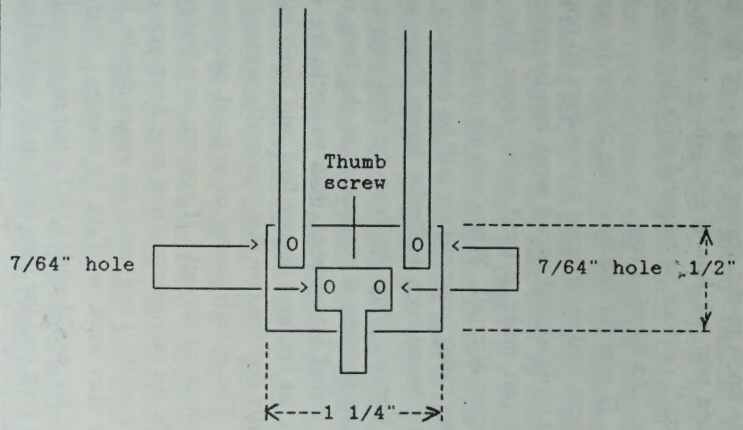


Figure # 3 COAX Connection

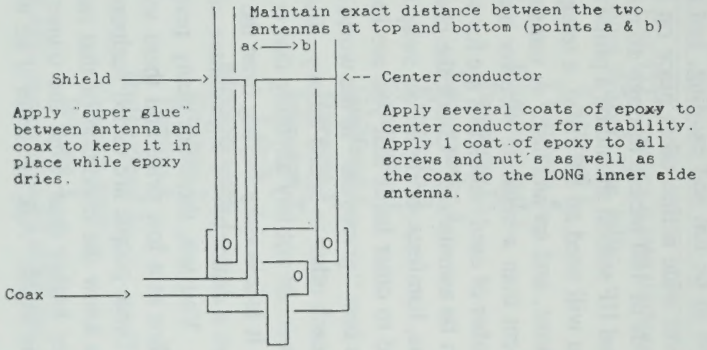
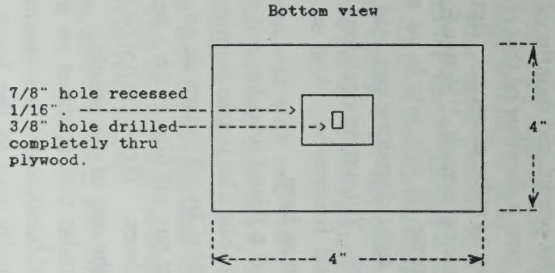

Maintain exact distance between the two antennas at top and bottom (points a & b)
a b
Shield
<-- Center conductor
Apply "super glue" between antenna and coax to keep it in place while epoxy dries.
Apply several coats of epoxy to center conductor for stability. Apply 1 coat of epoxy to all screws and nut's as well as the coax to the LONG inner side antenna.
Coax

Figure # 4 BASE MOUNT



Insert Tee Nut Fastener through bottom of base mount and apply a thin layer of epoxy to secure the fastener to the base mount.

In the Beginning...

When a new ham opens that envelope and sees his call letters for the first time, it can be one of his greatest thrills. The weeks and months of study have paid off and he is now a member of that elite, international group known as radio amateurs. But it won't be long before he is asking himself, "Now what do I do?"

It is the purpose of this article to answer that question. A few right decisions can lead to lifelong fun and excitement. Yet wrong decisions can lead to disappointment and frustration. And so I speak to you, ... the fresh, new ham.

If you can find a friend who has not only been a ham for many years but who is also genuinely enthusiastic about the hobby, by all means do so. He knows the little tricks that pay off big. Such a helpful guide is known as an "Elmer." If one cannot be found, then you'd better read the rest of this article.

I consider a radio that operates on the 2 meter band to be essential because this is the main link to the local ham community and to the latest goings on around town. Used radios are easy to find if you wish to save money. However, I do not consider 2 meter operation to be fun and exciting, just a useful tool. The world wide action takes place on HF radio, the low bands of 160 meters through 10 meters. Setting up a good HF station should be a prime objective.

You will need an HF radio, a telegraph key or a microphone, and an antenna. A transceiver is more convenient than a separate receiver and transmitter. The number of used radios that are for sale at any one time can be astonishing. Check the classified advertisements, hamfests, or on the air swap nets. Or pass the word to other hams that you are looking. Hams have the best "grapevine" in the world and they love to help each other to spend money. But if you are a new comer, do not buy anything that is used without advice. It is less risky buying from the actual owner than from a dealer unless a guarantee of happiness is offered. You see, there are many people who buy used radios at a low price and them sell them for a profit. These people are called scalpers. They may not even know the condition of that radio, yet their prices are higher than what the owner thought the radio was worth. Ask the seller if he was the actual owner and user of the radio. Can he tell you what that little knob in the corner does -- or did he "forget." When you ask him if everything works does he say "yes," or does he respond with the famous scalper's line, "As far as I know."

If you do not have the ability to perform radio repairs, and most hams now a days do not, be warned that professional circuit work can be rather expensive and can make a used radio seem like not such a bargain after all. When you are ready to trade up to a better radio, your old rig will be easier to see if it is a name brand such as Drake, Icom, Kenwood, Ten-Tec or Yaesu. Buy the best rig that you can possibly afford because it is cheaper in the long run to make the initial investment, than to settle for second best only to become dissatisfied and have to sell it and finally buy the one that you really wanted all along!

The effectiveness of a good antenna cannot be emphasized enough. If you are on a budget and must settle for one antenna that may keep you quite happy for a while, I suggest a 40 meter dipole, because this will also work well on 15 meters. Both bands are good for world-wide QSO's but in general, 15 meters will give you the long haul stuff, and 40 meters is for contacts a bit closer. The 10 meter Novice band is red hot right now, and a 10 meter dipole is only 15 feet long. Or, use a CB antenna with each element reduced by 9%. But, whatever you do, always use a quality coaxial cable with a non-contaminating (ultraviolet proof) jacket. Beware of junk that was made to take advantage of poor CB operators who do not receive the training of a ham radio course. Coax with foam dielectric has less loss originally, but after a few years exposure to sunlight, it begins to deteriorate. Avoid it. If you decide to put up a vertical antenna, tests have shown that verticals (as well as other antennas) work better when mounted high above ground [as compared to ground mounting] even if less radials are used.

The selection of a microphone is very important. You want one that accents the voice frequencies between 300 Hz and 2700 Hertz. Just a touch on the high pitch side can make your voice more penetrating so that it will be clearly understood and yet still cut through QRM. The microphone that comes with the radio or that carries the same brand name is not necessarily the best choice. Some very popular micro-

phones for DX ar the old Astatic D-104, the Shure 444, and the Heil. They may not sound "natural" but they really cut through the QRM. The best way to check your audio is to have a friend listen. Explain to him (her) what type of sound you wish for (natural, penetrating, sharp). Be sure that he has his receiver's noise blanker turned off. Noise blankers can do a nice job of eliminating QRN, but they sure chop up audio. I used an oscilloscope for years to check my audio, and I finally decided that the human ear knows what is best. It is okay to run more microphone gain in order to produce greater talk power as long as your friend tells you that your signal remains clear and not muffled, and as long as you do not splatter on to adjacent frequencies. Many hams use one microphone gain setting for natural sounding audio as would be desired for friendly rag chews, and a second higher gain setting for punching through DX pile-ups. If you like to have both hands free, then use a desk top microphone. But if leaning over a desk mic gives you a backache, try a hand-mic. Hand held microphones also tend to reduce background noises somewhat.

The loudspeaker is also an important consideration. The small built-in speakers that come inside of radios are generally okay, but nothing special. They are usually not even aimed at the listener. Try different external loudspeakers until you find what you like. As with microphones, the best frequency response is between 300 and 2700 Hz. Wide range, high fidelity speakers are not advisable because they really bring out the noise, static and hetrodyne whistles. Small power horn speakers such as used in an outdoor public address system generally work well with voice frequencies. The old war surplus speakers with plastic cones instead of paper, that come in green metal boxes, and were used in Jeeps, are excellent. I am always scouting for them a hamfest flea markets, but two out of three that I find are rotted and worthless. So if you do find one, don't gamble too much money. And they come with a weird impedance matching transformer that has to be removed -- then connect the speaker directly to the audio output jack of your rig. Many people like headphones. You can certainly hear clearly with them. But don't tell your ear doctor that you are using headphones because he will certainly think they damage your hearing. But what do those ear doctors know anyway? Huh?

Use a strong desk that won't wiggle in time with your pencil strokes. And get yourself a comfortable chair. Hard or soft does not matter, but it either needs good back support or no back at all (like a stool). Choose one that keeps your face near to level with your ratio's frequency display and S-meter, or raise up your rig. A little bending is okay, but not too much.

Ground your radio chassis to a cold water pipe that goes into the earth through a continuous run of copper. Or use a pipe hammered deep into the ground. Connect with heavy wire, flat copper strap, or coax braid if you've got it. A good ground can avoid many problems.

I will conclude with one more suggestion. If I had to choose just one accessory, that although not necessary, would be fun to have, it would be a good peak reading watt meter that also can read standing wave ratio. This can add a great deal of enjoyment to the operation of your station.

Have fun, and 73, Mike, K2SDD

Thanx: Radio Amateurs of Greater Syracuse (NY) RAGS Review, WA2PUU Ed.

Did You Know ... ?

The RARS EXCITER makes it into thirteen other NC counties besides Wake? The tally:

Carteret 1,
Chatham 5,
Cumberland 1,
Durham 25,
Edgecombe 1,
Franklin 3,
Granville 1,
Guilford 1,
Harnett 1,
Johnston 7,
Lee 2,
Mecklinburg 1,
Orange 2,
Person 1,
Rutherford 1,
Vance 3, and
Wilson 3.

It also goes to RARS members in **10 different states**, as well.

An Introduction to Handy Hams International

Chris Hux, N4PNO

The Handy Ham organization is a part of the Courage Center in Golden Valley, Mn. It was founded in the early 70's to help local handicapped people get their ham tickets. It has evolved into an International group, utilizing amateur radio to expand the horizons of the physically impaired.

K0HR Bruce Humphries is the Director. KF0I Maureen Pranghoffer is the student director. W0SGJ Sister Alverna is in charge of Educational materials.

There are 2 radio camps offered each year. A winter camp in California and a summer camp in Minnesota at one of 2 sites that are available. To be a member of the Handy Ham system it now costs a $10 a year fee . The member receives the quarterly news letter Handy Ham World.

They are able to attend radio camp and receive any of the Educational services of Handy Ham.

At camp the campers are broken up into the License class that they are working toward. Class is than held 3 or 4 times a day with recreational activities in the afternoon. There are also a few HF stations set up at camp for people to operate on.

Handy Ham makes it possible for anyone with a physical disability no matter what it is to get their Ham License. They have on cassette tape all of the ARRL License manuals and other book materials. The question pools are available in a braille format for the blind.

Handy Ham has developed adaptive devices for the deaf and non mobile person to operate radios.

There is a 30 minute VHS VCR tape about Handy Ham available from their headquarters.

The Handy Ham headquarters station has the call of W0ZSW. They also have several nets on HF.

A member can borrow materials and than send them back or purchase for a very nominal charge.

Handy Ham Net Listing

28.390 Monday only 15:30 UTC.
7.130 Thursday 21:00 UTC.
14.280 Monday 20:30 to 21:30 UTC.
21.410 Wednesday 20:00 to 21:00 UTC.
West Coast 7.285 Wednesday 17:30 UTC.

Other Nets

International Handicapper Net
14.287 MHz 16:00 to 18:00 UTC.
ACB Net 14.305 MHz 18.00 to 19.00 UTC.
ARRL Information 3.940 MHz Sunday 13:00 UTC.
Hadley School QSO 21.375 MHz
Wednesday 05.00 to 06.00 UTC. Also 01:00 to 02:00 UTC. Sunday.
Handicappers Information 7.270 MHz Mon to Fri. 20:00 UTC.
NFB Net 14.285 MHz Saturday 18:00 UTC.

Handy Ham Calling Frequencies

28.390 phone 28.112 CW.
21.290 phone 21.112 CW.
14.290 phone no CW for 20.
7.290 phone if no nets. 7.212 CW.
3.990 phone 3.712 CW.

Books on Tape

All of the ARRL License manuals.
What Is Ham Radio.
Ham Radio a Wonderful Hobby.
Questions/Answers Tech/General License Manual.
FCC Rules and Regulations.
Skills For Operating a Ham Radio Station.
CW Abbreviations and Q Signs.
Learning About Antennas.
Public Service Communications.
Getting Connected to Packet Radio.
Amateur Callsign Prefix.
RFI Book,
ARRL Net Directory.
Code tapes of any speed.

For more information or to become a member contact Handy Ham at 3915 Goldenvally Rd., Golden Valley, Mn. 55422.

I would be glad to help anyone or try to answer questions.

73, N4PNO, Chris Hux

Field Day

continued from page 1

while you seek another contact! (One other point -- for some reason, a YL at the mic REALLY gets the contacts!!)

As you can see, each transmitter is really a TEAM effort -- combining a good operator, and a good logger. When things are hot and heavy, you can expect to make maybe 30 or 40 contacts per hour. If you get tired making contacts, you can switch with your logger -- or you can let someone else in on the fun, while you check out the hamburger grill or the cooler (always the center of RARS functions!) -- or just wander around to see how the other RARS stations are doing. Sound like fun? It is! It's one of the best contests in the year, and certainly THE BEST social/operating activity within RARS.

Friday, 22 JUN, the band captains will be there, starting to erect the antennas and get things set up. This effort will continue Saturday morning. Hopefully, come 1:00 PM Saturday, all will be set up, and the contest begins. If you can make it Friday to lend a helping hand, by all means do! If not, Saturday early AM there will still be much to set up. Every hand available to assist in set-up (and tear down on Sunday afternoon) is GREATLY NEEDED!!

Again, the "picnic" is Saturday afternoon. If you come early, or plan to stay overnight, be sure to bring your lunch / breakfast.

The map to the site is on the "flip-side" of the calendar in the center of this EXCITER. Talk in on 146.04/64.

Last year, over 120 RARS-ites came to Field Day. We were featured on 2 TV stations here in Raleigh, demonstrating our emergency communications preparedness skills. RARS took the ALL TIME RECORD for our class. We can do it again!! We can do it better!! SEE Y'ALL THERE!!

aa4my

UPS To Drop ACSSB??

United Parcel Service may be on the verge of dropping ACSSB (Amplitude Compandored SSB) and going to FM in its recently acquired 220 - 222 MHz band (taken FROM amateur use). The land mobile industry is buzzing with a rumor that II-Morrow, the UPS subsidiary which is supposed to build the ACSSB gear is having trouble making it work properly. The problem appears to be with the pilot tone that locks the system. It repeatedly will not accept a 200 cycle drift. The rumor continues that II-Morrow will soon announce that the radios to be supplied will be FM, and designed for 2.5 KHz spacing.

One of the primary reasons given by the FCC for reallocating the 2 MHz band to the Land Mobile Service was for its use in the development of new, narrow band technologies. If the rumor is true, it would seem that everyone from the FCC on down has been duped by a rather crafty con artist's job on the part of an overly bottom line oriented United Parcel Service. So much for the introduction of new technology. If FM ends up being used, a Congressional investigation of UPS, its subsidiary, II-Morrow, and the whole procedure used to shanghai the band away from amateur use.

WESTLINK Report, 4/13/90

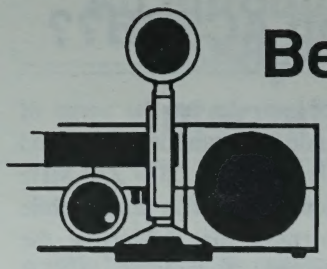
Ham Sham Man Behind Bars

Justice isn't always swift, but it is sure. Michael Harrison, WB2PTI, who defrauded hams with "super deals" on Uniden 10 meter transceivers, but never delivered any, is behind bars.

On Feb. 14, Harrison was fined $125,000 and ordered to serve twenty-one months in Federal prison, in addition to paying full restitution + interest to each victim. To add insult to injury, Harrison must also pay $1,210 per month to the Bureau of Prison for his confinement costs.

The sentencing caps the story on Harrison, whose activities stung many hams late '88 -- including several here in NC.

Info from W5YI Report 5/15/90



Bert's Beat

"Bert" Bailey, W4FMN

More on the Veteran Dipole

Let's see -- last month we left off with the 468 poop (how to determine the length of the dipole) and now we want to see how to hang the thing up in the air so we can transmit and receive. (We'll ignore those who want only to transmit). Remember that the dipole and its transmission line are not of insignificant weight. As a matter of fact, it can hang mighty heavy. So it's not enough simply to solder the coax to the antenna: you must provide a physical bond. There are lots of ways to do it but one way is as shown.

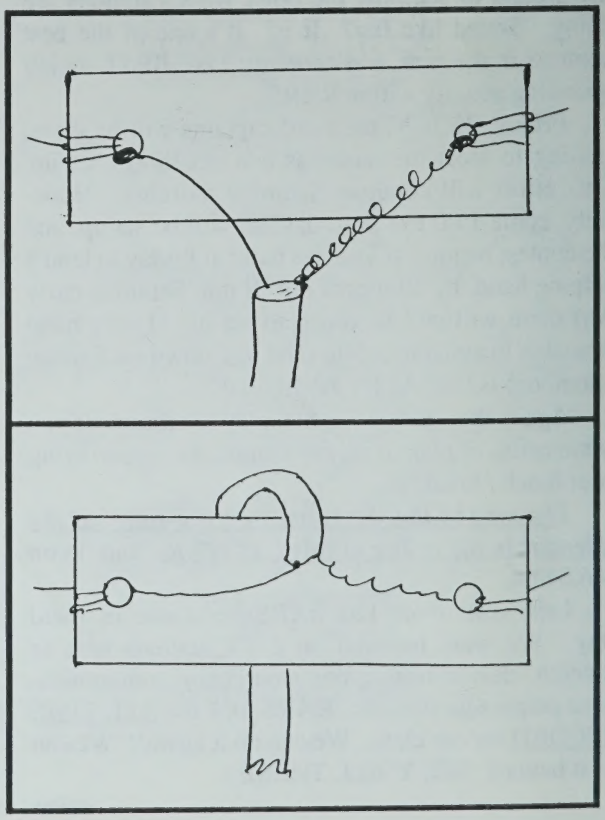
Using a phenolic (or plastic) block, you must wrap a few turns of the antenna around the end of the block to provide strength. These will be about the same amount of antenna you will use on the end connectors we'll talk about shortly. Now to one end of the antenna solder the conductor of the coax; do the same to the end of the other half of the antenna, i.e. each quarter wavelength. We now have both a mechanical and an electrical bond between the coax and dipole.

What about the mechanical bond required for the weight of the coax? Well, again there are lots of ways to handle this problem. One way that works is shown in Fig. 2. Although not pretty to look at, this method cuts the mustard. The weight of the coax is not borne by the antenna - coax connection, but by the whole phenolic block. Now if you tape the whole block with abandon, you'll have a VFB dipole and DXCC should be a breeze. Remember this is but one method of stringing up a simple dipole. You can buy assemblies so that all you have to do is connect your coax to the UHF fitting provided and solder the ends of your dipole to real nice formvar wire affixed to the store - bought assembly. But such vendors are rare in lonely Pacific islands, during emergencies, or extended holidays. Usually just at the time you need a workable antenna NOW. So much for the center of the friendly little dipole; the poor mans buddy. Next issue, we'll talk about tying the ENDs of the dipole to your neighbor's bedroom window, tall trees, towers, adjacent apartments or other popular appurtenances.

* * * * *

Run for Research -- Wake Forest

It's that time again. Most years, it's been Bill's gang running -- not the race -- but the radio's for this 5K and Pinkie Cooke, the honcho for this event, on behalf of the National Foundation for Ileitis and Colitis, the NFIC that is. So Bill of WD4CCA escutcheon, be prepared to receive a landline from Dad on this run. You'll probably work with, guess who?? -- Ben the N4AFO and Pat the WA4CLT. Maybe you'll need help this time. If I'm not running, I'll hep. In any case, RARS can depend on Bill to bring increased luster RARS' colors. Dit Dah Dit!



Call Sign Mugs

Your amateur radio call sign on a 10 oz. distinctive, high quality, stoneware coffee mug. Your choice of the ARRL or QCWA logo on the flip side. Get one for the shack and one for the work place. Mug pairs can have the same or different call signs. Coffee mugs are $8.95 each, or two for $15.95. Different call signs allowed. Names added $1.00 extra per cup. Price includes S/H for the continental US and APO.

Excellent Gifts or Club Awards!

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Call Sign Cups
P.O. Box 17062 Dept. M
Raleigh, NC 27619

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782-0791 **Raleigh, NC 27609**

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411 Daniels St. 833-8104

For Sale:

175 IRCs (International Reply Coupons) @ $0.50 each. All or part. [Ed. Note: These are currently $0.95 each at the Post Office!]

ALSO

DL-103, 3 element 10 meter Delta Loop Antenna. See CQ Magazine Ads. Regular $310 -- My price: $160 (used only twice: P40DX (Aruba DX-pedition) and last year's RARS Field Day.

Ron Oates, AA4VK @ 847-3279

Wanted:

HF Ham Receiver. Whatcha got?

Lanny, KC4MHJ @ 467-1597

NC / SC / VA Hamfest Calendar:

Jun 03	Manassas, VA Talk In 146.37/97 & 223.060/224.660 Info: Joe Schlatter, K4FPT 703-368-8599 (eves)
Jun 09	Winston-Salem, NC Talk In: 146.04/64 Info: Jim Rodgers 919-762-2493 (9 AM - 10 PM only)
Jul 21	Cary, NC
Jul 28 - 29	Asheville, NC Info: Willi WA4WPM 704-253-0269
Aug 05	Berryville, VA (great bar-b-que!)
Aug 11 - 12	High Point, NC
Sep 01 - 02	Shelby, NC (The gran-daddy of 'em all!)
Sep 15 - 16	Virginia Beach, VA (ARRL Roanoke Division Meet)
Sep 22	Spruce Pine, NC
Sep 30	Benson, NC (JARS)
Oct 07	Rock Hill, SC
Oct 14	Maysville, NC
Oct 20	Smithfield, NC (Triangle East ARA)
Nov 11	Concord, NC
Nov 24 - 25	Greensboro, NC

Amateur Radio -- A National Resource

Raleigh Amateur Radio Society, Inc.
P.O. Box 17124
Raleigh, NC 27619

MR. CHARLES R. LITTLEWOOD K4HF
2005 QUAIL RIDGE ROAD
RALEIGH NC 27609

Next Regular RARS Meeting: Wednesday, June 6, 7:30 PM
Raleigh YMCA , 1601 Hillsborough St.
RARS Nets: Daily @ 8:00 PM on 146.04/64
10 Meter - Tuesdays, 7:00 PM on 28.364 MHz
YL Info Net - Wednesdays, 9:00 PM, 04/64
Technical Information Net - Saturdays, 8:30 PM, 04/64
Code Practice - Mondays & Fridays 9:00 PM, 04/64
RARS Computer Bulletin Board: 781-2530

Events Calendar

Jun	06	Regular RARS Meeting w/ Exams -- Info Vince, 847-8512
Jun	**09**	**Hamfest!! Winston-Salem** Talk In 146.04/64. Info: 1-919-760-2493
Jun	09 - 10	ARRL VHF/UHF QSO Party -- RARS to operate at Butner Field Day site.
Jun	13	RARS Homebrew SIG Meeting -- N4UOF's QTH, 7:30 PM - Info 469-1758
Jun	14	RARS VHF/UHF SIG Meeting -- WA4MJF's QTH 7:30 PM - Info 266-4434
Jun	16 - 17	All Asian DX Contest -- see page 83, June QST
Jun	16 - 17	SMIRK 6 Meter Contest -- see page 83, June QST
Jun	20	Advisory Board Meeting -- YMCA -- 7:00 PM. All Welcome
Jun	**23 & 24**	**Field Day**
Jul	**21**	**Hamfest - Cary!!**
Jul	24	VHF SIG -- YMCA -- 7:30 PM -- Info: Alan, AB4OZ 787-1111